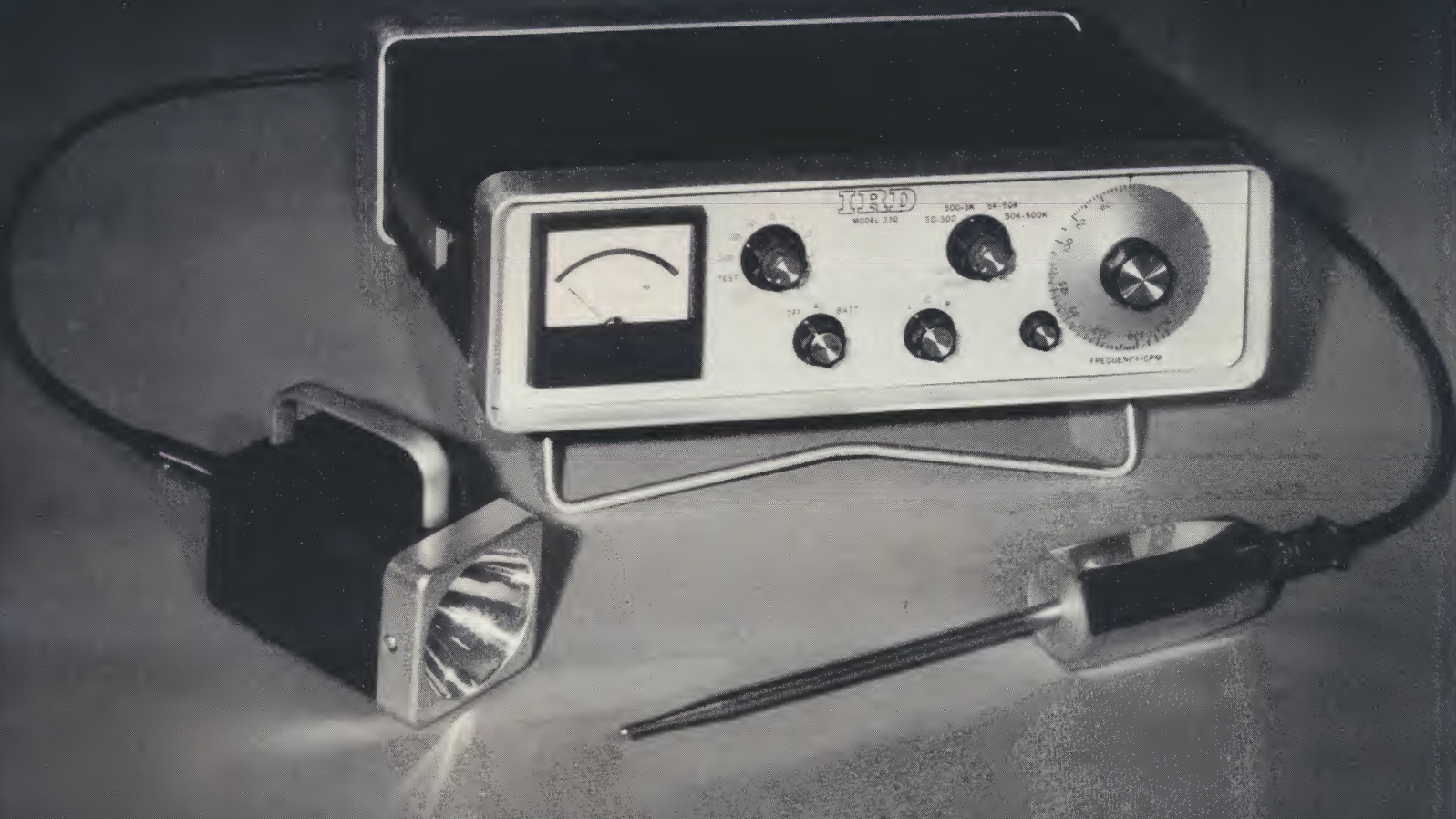


IRD

MODEL 330
Vibration Analyzer—
Dynamic Balancer



INTERNATIONAL RESEARCH AND DEVELOPMENT CORPORATION



Vibration is the KEY to Machinery Condition

From powerhouse to paper mill, from ships at sea to the top of a refinery tower, excessive vibration means the same thing. Mechanical trouble is present.

As modern machines grow more complex and as production demands on old machines climb, industry must meet the challenge with closer machinery surveillance using periodic vibration checks to detect trouble in its early stages. When vibration is excessive, analysis reveals which part is defective and why. It takes a modern instrument to keep pace with this ever-growing demand for more production, closer tolerances, better quality and . . . lower maintenance costs.

The IRD Model 330 Vibration Analyzer/Dynamic Balancer is this modern instrument. Solid state circuitry and rechargeable batteries provide a new freedom of portability and rugged dependability. Its simplicity of operation is based on years of practical experience by thousands of IRD customers in all types of industry. Its broad range and sensitivity provide the utility for applications plant-wide, in the laboratory and in the field.

The AC or Battery Powered 330 extends VIBRATION ANALYSIS and in-place DYNAMIC BALANCING to any place a man can go.

PORTABILITY — This compact, 17½ pound instrument is ruggedly constructed with the latest solid state circuitry to withstand continuous industrial service and yet maintain its laboratory precision. The unit in the carrying case with all standard accessories weighs only 30 pounds and fits easily under an airline seat.

In addition to operating on 110 volt, 50/60/400 cycle AC power, the 330 operates on replaceable mercury batteries for the analyzer portion and rechargeable battery pack for the stroboscopic light. The 330 can be applied wherever machinery maintenance and balancing problems are encountered.

FLEXIBILITY — A frequency range from 50 to 500,000 CPM (cycles per minute) covers all conventional machinery speeds as well as higher frequency multiples often found. Vibration displacements from one-millionth to one-tenth of an inch provide the sensitivity for application on precision grinders to slow moving ship propellers. Vibration velocity from .001 to 100 in/sec aids in detecting and pinpointing high frequency vibrations — from bearings, gears and very high speed machines.

UTILITY — The IRD Model 330 Vibration Analyzer/Dynamic Balancer is a *complete* instrument. With the tunable filter individual vibrations are separated from others just as a radio is "tuned" to individual stations — pinpointing such troubles as unbalance, misalignment, bad bearings, faulty gears, drive belts and looseness. The stroboscopic light indicates the position of unbalance by "freezing" the rotating part and visually pinpoints trouble. The "strob" light is also used to check speed and for slow motion studies.

APPLICATIONS

ENGINEERED MAINTENANCE CONTROL — AC or battery operation permits periodic checks and vibration analysis to pinpoint trouble for scheduled correction on machines everywhere — from refinery towers to ships at sea.

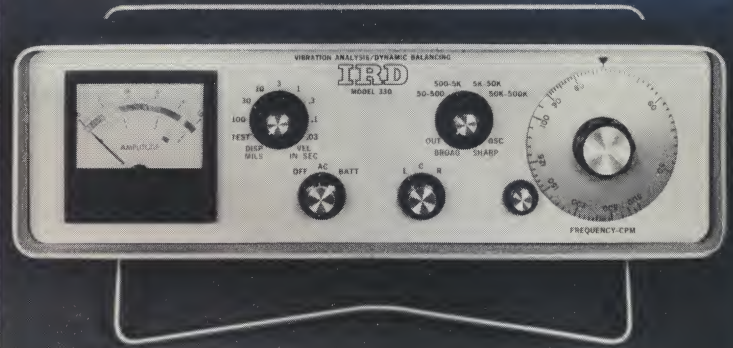
QUALITY CONTROL — Vibration in production equipment often causes poor quality. The 330's exceptional sensitivity applied to the most precise equipment will give an early indication of undesirable vibration permitting correction before spoilage.

INSPECTION — The 330 goes where it's needed for vibration checks on purchased components, on subassemblies, and in final assembly to prevent excessive vibration in finished products.

FIELD SERVICE — With battery operation and rugged, dependable circuitry, installation checks and in-place balancing can be done anywhere.

ENGINEERING — The 330 Vibration Analyzer/Dynamic Balancer with its broad frequency range and laboratory precision permits fast, accurate evaluation of vibration effects in experimental machines. Trouble areas are quickly located for correction.

IN-PLACE OR SHOP BALANCING — This versatile instrument may be used with equal ease for dynamic balancing of parts in-place or on a balancing stand regardless of size, speed or complexity.



Vibration Amplitude (amount) is indicated on the meter in **DISPLACEMENT** or **VELOCITY** in eight (8) overlapping scale ranges to provide optimum resolution. The **TUNABLE-BROAD/SHARP FILTER** permits selection of individual vibrations to determine cause of trouble. **BROAD FILTER** provides for easy tuning. **SHARP FILTER** provides optimum rejection of background vibrations. **INTERNAL OSCILLATOR** flashes strob light for filter tuning, slow motion studies and strobometer measurements. Dual pickup inputs for two-plane balancing are included.



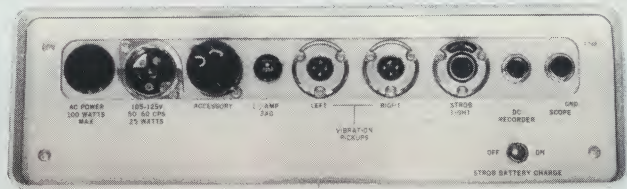
The rugged, sensitive **IRD VIBRATION PICKUP** is hand held with the straight probe or attached to a machine to sense the vibration. It can be used in any position without influence on readings. The **STROBOSCOPIC LIGHT** visually pinpoints trouble and indicates position of unbalance. Also furnished are the AC power, strob and pickup cables.



The 8" x 20" x 15½" industrial vinyl-covered **CARRYING CASE** provides space for the instrument and all standard accessories plus space for extra pickups, cables and pickup holders. This rugged and complete unit fits neatly under an airline seat.

IRD Training Programs

The plant-wide application of IRD equipment is supported by IRD's National Audio-Visual Training Program throughout the continental U.S.A. and Canada plus advanced training at IRD's plant on balancing and engineered maintenance. A continuous IRD customer service — without charge.



Connections are provided for two (2) vibration pickups, stroboscopic light, oscilloscope, IRD Balancing Computer, IRD Synchronous Filter/Remote Phase Indicator, and DC Recorder.

SPECIFICATIONS

Frequency Range

covers all machinery speeds and high frequency multiples
50 to 500,000 CPM (cycles per minute)

Tunable Filter Range

to select individual vibrations
50 to 500,000 CPM in four ranges:
50 to 500; 500 to 5000; 5000 to 50,000;
50,000 to 500,000 CPM

Tunable Filter Selectivity

broad for easy tuning — sharp for best filtering
Broad: Bandwidth 10% Max. of selected frequency at 3 db downpoints. Q=10
Sharp: Bandwidth 5% Max. of selected frequency at 3 db downpoints. Q=20

Internal Oscillator Range

controls strob for filter tuning, strobometer & slow motion studies
50 to 500,000 CPM in four ranges:
50 to 500; 500 to 5000; 5000 to 50,000;
50,000 to 500,000 CPM

Stroboscopic Light

visually pinpoints troublesome parts
One flash per cycle to 5000 CPM; submultiple firing to 500,000 CPM

Sensitivity

minute displacements for precision machines — velocity for very small high frequency measurement
1 microinch peak-to-peak displacement;
.001 inch/second velocity

Displacement Ranges

provides for easy reading over dynamic range of 100,000 to 1
0 to 0.10 inch in eight full-scale ranges:
0.03, 0.1, 0.3, 1, 3, 10, 30 and 100 mils peak-to-peak (1 mil = .001 inch)

Velocity Full Scale Ranges

for high frequency vibrations
0 to 100 inches/second in eight full-scale ranges:
0.03, 0.1, 0.3, 1, 3, 10, 30 and 100 inches/second

Overall Dimensions

Unit — 5" x 15" x 13³/₄"
Case — 8" x 20" x 15¹/₂"

Weight

Analyzer including instrument batteries and Strob Battery Pack — 17¹/₂ pounds
Analyzer with carrying case and accessories — 30 pounds
Shipping weight approx. — 45 pounds

Power Requirements

- (a) 105/127 volts; 50/60/400 cycles, 25 watts
- (b) Instrument batteries (6) Mallory TR-136R Mercury Batteries — over 200 hours life.
- (c) Strob batteries (3) Gulton R-400 Nickel Cadmium Cells (rechargeable) Minimum one (1) hour continuous strob operation.

Standard Accessories

- Furnished with the Model 330
- 1 — Model 544 Vibration Pickup (Part #4526)
 - 1 — Straight Probe, Part #1103
 - 1 — 12' Pickup Cable, Part #4521
 - 1 — Model 568 Stroboscopic Light (Part #4524)
 - 1 — 12' Stroboscopic Light Cable, Part #4522
 - 1 — 8' Power Cable with Adapter, Part #2914
 - 1 — 10' Power Extension Cable (3-wire), Part #2504

Optional Inputs

Details are available on request.
Accelerometer — for vibration acceleration measurement.
Non-Contact Pickup — for displacement measurement without contact.
Microphone — for relative sound measurement.

IRD®

INTERNATIONAL RESEARCH AND DEVELOPMENT CORPORATION

Subsidiary of H. H. Robertson Co.

6150 Huntley Road, Worthington, Ohio (Columbus), Phone 885-5376

DISTRICT OFFICES

Atlanta, Ga.
404 874-6268

Boston, Mass.
617 CA 7-5236

Chicago, Ill.
312 427-1209

Cincinnati-Indianapolis
317 647-4025

Detroit, Mich.
313 453-2828

Los Angeles, Cal.
213-622-2841

Philadelphia, Pa.
215 JA 8-5990

Pittsburgh, Pa.
412 795-1606

San Francisco, Calif.
415 781-5529

Union, N. J.
201 MU 6-1433

Worthington, Ohio
614 885-5376

FIRST CLASS

PERMIT NO. 54

WORTHINGTON

OHIO

BUSINESS

REPLY

MAIL NO POSTAGE STAMP NECESSARY IF MAILED IN UNITED STATES

postage will be paid by

INTERNATIONAL RESEARCH AND DEVELOPMENT CORPORATION

6150 HUNTLEY ROAD

WORTHINGTON, OHIO

1966

RESERVATION REQUEST
IRD ADVANCED TRAINING PROGRAMS

1967

Reference: IRD Training Brochure

Please enroll the following men in your Advanced Training Program(s) as noted below:
NAME TITLE and/or DEPT.

☐ ENGINEERED MAINTENANCE
SELECT
DESIRED
SESSION
☐ September 14 & 15
☐ October 12 & 13
☐ November 9 & 10
☐ January 18 & 19
☐ February 15 & 16
☐ March 15 & 16

☐ SHOP AND PRODUCTION BALANCING
SELECT
DESIRED
SESSION
☐ September 21 & 22
☐ October 19 & 20
☐ November 16 & 17
☐ January 25 & 26
☐ February 22 & 23
☐ March 22 & 23

☐ Please make reservations at Howard Johnson's Motor Lodge—North for arrival evening before and during session —singles, —doubles. ☐ Lodging not Required.

Company _____

Address _____

City _____

State _____

Authorized by _____

Title _____

(PLEASE PRINT)

Your reservations will be confirmed by return mail. There is no charge for IRD training.
Your only expense is for travel, meals and lodging.

☐ Please send schedule for national Audio Visual Training Program in our area.

IRD #556J

LITHO IN U.S.A.



INTERNATIONAL RESEARCH AND DEVELOPMENT CORPORATION
SUBSIDIARY OF H. H. ROBERTSON CO.

6150 HUNTLEY ROAD
WORTHINGTON, OHIO
(Columbus) 885-5376

September 15, 1966

Mr. T. Nelson
Systems Consultant
Box 1546
Poughkeepsie, New York 12603

Reference: Your Inquiry - INDUSTRIAL RESEARCH

Gentlemen:

Thank you for requesting the enclosed information on IRD equipment.


The portability of IRD instrumentation offers you the ultimate in flexibility - for in-place dynamic balancing and vibration analysis, plant-wide.

Your purchase of IRD equipment is supported by comprehensive training covering all phases of machinery vibration analysis and dynamic balancing. The enclosed brochure describes three (3) IRD Training Programs available to all IRD customers without charge.

We appreciate your interest and look forward to serving you. For more specific information please complete and return the enclosed card.

Very truly yours,

IRD CORPORATION



Rufus B. Jones, Jr.
General Sales Manager

pmd
Enc.

cc: TEK Bearing, Inc.
109 Smith Street
Poughkeepsie, New York

Mr. Robert H. Wallace
IRD District Manager
1000 Stone Street
Union, New Jersey
Phone: 201/MU 6-1433